



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of : Confirmation No. 1300
Takamasa FUCHIKAMI et al. : Attorney Docket No. 2005_1402A
Serial No. 10/550,387 : Group Art Unit 1621
Filed November 2, 2005 : Examiner Jennifer Y. Cho
PROCESS FOR PRODUCING :
FLUORINE-CONTAINING :
ACRYLIC ACID ESTER :

DECLARATION UNDER 37 CFR 1.132

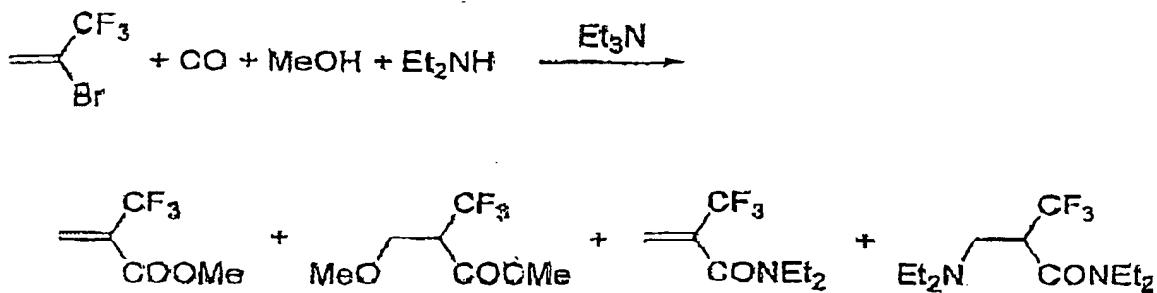
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

I, Kenji Tokuhisa, one of the inventors named in the above-identified application, hereby declare as follows:

Scheme 2 illustrated in the Matteoli et al. reference applied by the Examiner clearly shows that the reaction with alcohol can provide fluorine-containing acrylic acid esters, whereas the reaction with secondary amine can provide N,N-disubstituted amides of fluorine-containing acrylic acids. In view of this fact, if the term "under the same conditions" is used, one skilled in the art would understand that tertiary amine is used commonly as a base, and alcohols are used as a starting material for acrylic acid esters, whereas secondary amines are used as a starting material for acrylic acid amides. In other words, the term "under the same conditions" does not mean the three materials, including alcohol, secondary amine, and tertiary amine, are simultaneously used. One skilled in the art would expect that co-use of alcohol and secondary amine would produce a mixture of acrylic acid esters and acrylic acid amides. Based on this expectation, I have conducted the following experiment.

EXPERIMENT



An autoclave was charged with 50 mmol of $\text{CH}_2=\text{C}(\text{CF}_3)\text{Br}$, 0.5 mmol of $(\text{Ph}_3\text{P})_2\text{PdCl}_2$, 65 mmol of MeOH, 55 mmol of Et_2NH , 50 mmol of Et_3N , and 50 mL of THF. The system was sequentially pressurized with carbon monoxide to 0.7 MPa, and the reaction mixture was then stirred at 120°C for 16 hours. I analyzed the reaction mixture by means of $^1\text{H-NMR}$ and GC-MS to determine the products. The spectra showed a large number of peaks, which revealed that the mixture contains many products. Furthermore, the results were interpreted based on the spectra disclosed in the Matteoli et al. reference. According to the interpretation, it was found that the mixture contains methyl 2-(trifluoromethyl) acrylate (Yield: 5%), N,N-diethyl 2-(trifluoromethyl) acrylamide (Yield: 11%), methyl 3-methoxy-2-(trifluoromethyl) propionate (Yield: 11%), and N,N-diethyl-2-(trifluoromethyl)-3-(N,N-diethylamino) propanamide (Yield: 3%). The target product, methyl 2-(trifluoromethyl) acrylate, was detected in a trace amount. Thus, the results were the same as what would have been expected by one skilled in the art.

Accordingly, the term "under the same conditions" means that the common condition is only the use of tertiary amine as a base, and alcohols are used as a starting material for producing acrylic acid esters, whereas secondary amines are used as a starting material for producing acrylic acid amides.

I further declare that all statements made herein of my own knowledge are true, and that all statements on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and

that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Dated:

April 8, 2008 at Yamaguchi, Japan

Kenji Tokuhisa
Kenji Tokuhisa